Experts question arson convictions

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(AP) -- We hear it after a smoky blaze that destroys a house, or an all-night warehouse inferno: The cause of the fire is under investigation.

Now those investigations themselves are getting a hard look, including the case of a Texas man executed two years ago for a house fire that killed his three little girls. Fire experts say he was wrongfully convicted because junk science was accepted as expert testimony.

The implications go far beyond Texas. More than 5,000 people are imprisoned nationwide for arson, and at least some are likely to have been wrongfully convicted, said five experts who analyzed testimony in the Texas case. The experts included veteran arson investigators and people with backgrounds in science and engineering who have taught other investigators.

"It's an unspeakable error and people don't want to admit they made that error," said John Lentini, one of the arson experts. "It means you might've sent someone to prison based on bad science. It means you might've caused a family to lose their life savings, based on bad science."

Lentini and his colleagues concluded that bad science was at the heart of the testimony that led to Cameron Todd Willingham's conviction for a 1991 fire in Corsicana, Texas. Willingham maintained his innocence up to his execution in 2004.

The expert panel, along with The Innocence Project, a New York-based group that seeks to uncover wrongful convictions, presented their study on Tuesday to a special Texas commission set up to examine forensic misconduct.

The problems with arson convictions could be huge. The Innocence Project commissioned the panel to study Willingham's case, but said its network of state projects around the country has already begun to review other arson convictions.

"It's really hard to get a number of how many people have been falsely accused, falsely convicted, falsely excluded from insurance payment," Lentini said. A hundred? A few hundred? Impossible to guess, without study of the evidence that convicted them.

Willingham's case stands out because he was executed. A few others are now on death row for arson murders, but the majority are serving prison terms. The Bureau of Justice Statistics counted 5,405 people imprisoned as of 2002 for arson, but that collected data from just over half the states.

Among the reportedly flawed ideas that were part of the testimony against Willingham:

- Gasoline-fueled fires burn hotter than wood fires, and melted aluminum in the house proved it was intentionally set. Wrong, gas blazes aren't necessarily hotter, the experts said.
- "Crazed" glass, a spidery cracking of glass, which investigators testified proved the presence of a hotter fire caused by an accelerant like gasoline. Experts now believe that cracking may take place when water is sprayed during firefighting, or if the glass is struck.
- Investigators testified that the fire had "multiple origins," which would imply that it was intentionally set. The experts who reviewed the testimony said there was no credible way to determine that.

Those ideas were "a hodgepodge of old wives' tales" accepted as fact without any scientific support, said Gerald Hurst, a private arson investigator trained as a chemist.

"Reading fire patterns the way they did it is like tea-reading," Hurst said. "It's no better than witch-hunting."

Slow progress on standards

The fire investigation mindset began to change with a study of investigations commissioned by a federal panel in 1977.

But the real revolution came in 1992, when the National Fire Protection Association -- a nonprofit organization of insurers, businesses, firefighters, builders and others -- issued a consensus document on fire investigations that discredited many long-accepted techniques, said Lentini, Hurst and others.

Still, it took years before the community of fire investigators accepted it. The International Association of Arson Investigators finally endorsed the findings of the 1992 document, known as NFPA 921, in 2000.

> **"It's no better than witch-hunting"**
>
> *-- Fire investigator Gerald Hurst*

Even so, reluctance to embrace the modern approach persists, said David M. Smith, a fire investigator in Tucson, Arizona, who retired to start his own investigation firm. That means a lot of investigations may have been built on shoddy science, said Smith, who helped study the Willingham case.

"It's not a joke, though my colleagues kid about it," Smith said. "If there is a fire and you get out and the rest of your family perishes, there's a pretty darn good chance you'll be arrested for arson and murder."

Although few would defend the old ways, Robert Duval, a senior fire investigator at the NFPA who didn't take part in the Texas reinvestigation, said the criticism is a bit too harsh. Like other forensic sciences, fire investigations grew out of experience.

"The investigators that were in the business 20, 30 years ago had what information was available to them, and what was being taught was what was being passed on from investigator to investigator," he said. "A lot of the stuff that was being taught wasn't necessarily true."

Since then, acceptance has been gradual but steady. But since the document is simply a guide, rather than a formal standard, not all have embraced it, Duval acknowledged. "There may have been some that haven't read it, or been reluctant to take a look at it," he said.

Adding more scientific rigor to their work has helped, but new techniques are still being learned and mistakes uncovered, Duval said. "There's nothing absolute in this sort of business," he said.

Jerry Rudden, an arson and bomb investigator for Tennessee, said the checks and balances of the criminal justice system should protect against convictions based on misguided testimony.

Meanwhile, investigators are determined to improve the state of knowledge. "There is a sustained effort on the part of folks in the business to raise the bar," said Rudden, who heads the IAAI's fire investigation committee.

At The Innocence Project, which has relied on DNA to exonerate some 175 people of the crimes that put them in prison, questions about arson add greater urgency to their call for state-by-state commissions to examine forensic problems in all criminal cases.

A federal law tied to funding for crime labs requires such commissions, but so far only a few states -- like Texas -- have put them in place.